Early Journal Content on JSTOR, Free to Anyone in the World

This article is one of nearly 500,000 scholarly works digitized and made freely available to everyone in the world by JSTOR.

Known as the Early Journal Content, this set of works include research articles, news, letters, and other writings published in more than 200 of the oldest leading academic journals. The works date from the mid-seventeenth to the early twentieth centuries.

We encourage people to read and share the Early Journal Content openly and to tell others that this resource exists. People may post this content online or redistribute in any way for non-commercial purposes.

Read more about Early Journal Content at http://about.jstor.org/participate-jstor/individuals/early-journal-content.

JSTOR is a digital library of academic journals, books, and primary source objects. JSTOR helps people discover, use, and build upon a wide range of content through a powerful research and teaching platform, and preserves this content for future generations. JSTOR is part of ITHAKA, a not-for-profit organization that also includes Ithaka S+R and Portico. For more information about JSTOR, please contact support@jstor.org.

PROBLEMS AND SOLUTIONS.

EDITED BY B. F. FINKEL AND OTTO DUNKEL.

Send all communications about Problems and Solutions to B. F. FINKEL, Springfield, Mo.

PROBLEMS FOR SOLUTION.

[N.B. The editorial work of this department would be greatly facilitated if, on sending in problems, the proposers would also enclose their solutions—*when they have them.* If a problem is not original the proposer is requested *invariably* to state the fact and to give an exact reference to the source.]

2900. Proposed by I. A. BARNETT, University of Saskatchewan.

AB is the diameter of a circle and Q_0 any point on the circumference; Q_1, Q_2, Q_3, $\cdots$ are the points of bisection of the arcs AQ_0, AQ_1, AQ_2, $\cdots$; to prove that the product of the chords of the circle BQ_1, BQ_2, BQ_3, $\cdots$, BQ_n is equal to $OA^n \cdot (AQ_0/AQ_n)$, O being the center of the circle.

2901. Proposed by NATHAN ALTSHILLER-COURT, University of Oklahoma.

Given the length of the base of a variable triangle and the positions of the feet of the altitudes on the other two sides, find (*a*) the locus of the vertex opposite the base; (*b*) the locus of the foot of the altitude on the base.

2902. Proposed by C. N. MILLS, Tiffin, Ohio.

Find the locus of a point the feet of perpendiculars from which, on the sides of a triangle, lie on a straight line.

Note by the EDITORS: It is well known that the circumscribed circle of the triangle is at least part of the locus, by virtue of the theorem of William Wallace, *Mathematical Repository,* March 1799. No proof of this result is called for in this problem.

2903. Proposed by A. A. BENNETT, University of Texas.

Given the base of a triangle in position and length, the length of the median to the base, and the difference of the base angles; find a simple ruler and compass construction for the triangle.

2904. Proposed by N. P. PANDYA, Amreli, Kathiawad, India.

Pairs of tangents to a conic intersect on a fixed straight line; find the locus of the middle points of the chords of contact.

2905. Proposed by the late ARTEMAS MARTIN.

A circle, radius a, is drawn on a circular slate radius r; a second circle, radius a, is drawn on the slate so as to intersect the first. If a third circle, radius a, be drawn on the slate, what is the probability that it will intersect the other two?

2906. Proposed by ELIJAH SWIFT, University of Vermont.

Given any number of five digits, reverse the order and subtract the smaller of the two numbers thus formed from the larger. Show that if told the last three digits of this difference, we can find the first two and give a simple rule for determining them.

2907. Proposed by G. E. RAYNOR, Princeton University.

Sum the following series:

$$(a)\ \sum_0^\infty \frac{1}{(2n+1)(3n+1)}; \qquad (b)\ \sum_0^\infty \frac{1}{(3n+1)(3n+2)}.$$